

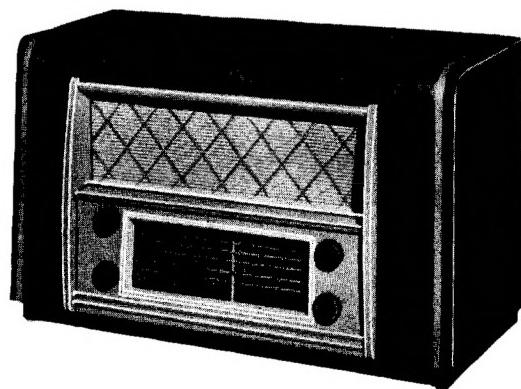
TECHNICAL INFORMATION AND SERVICE DATA

A.W.A. RADIOLA Model 558-TC

FIVE VALVE, TWO BAND, BATTERY/VIBRATOR
OPERATED SUPERHETERODYNE

ISSUED BY:

AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



ELECTRICAL SPECIFICATIONS

Frequency Ranges:

Medium Wave 540-1,600 Kc/s.
(555-187.5 Metres)

Short Wave 6-18 Mc/s.
(50-16 Metres)

Intermediate Frequency 455 Kc/s.

Battery Complement:

2 — 45 volt "B" Batteries } Cable No.
1 — 1.5 volt "A" Battery } 19801

1 — 3 volt Cycle Lamp battery for Dial illumination.

Vibrator Power Unit Operation:

Unit No. 19190: 1 — 4 volt accumulator.
Unit No. 22770: 1 — 6 volt accumulator.

Battery Consumption:

1.5 volt "A" Battery, 0.3 Amp.
90 volts "B" Battery, 16 mA "FULL".
 9 mA "SAVE".
4 volt vibrator operation, 0.8 Amp.
6 volt vibrator operation, 0.7 Amp.

Dial Lamps:

2.5 volt, 0.25 Amp. M.E.S.

Fuses:

Battery Operation, 1/4-3/8 Amp.
Vibrator Operation, 3 Amp.

Valve Complement:

- (1) 1T4 — R.F. Amplifier.
- (2) 1R5 — Converter.
- (3) 1T4 — I.F. Amplifier.
- (4) 1S5 — Detector, A.F. Amplifier, A.V.C.
- (5) 3V4 — Output.

Vibrator Cartridge:

4 volt operation, V6804.
6 volt operation, V5211.

Loudspeaker (Permanent Magnet):

9" x 6" Part No. 21515.
Transformer XA20.
V.C. Impedance 3 ohms at 400 C.P.S.

Undistorted Power Output:

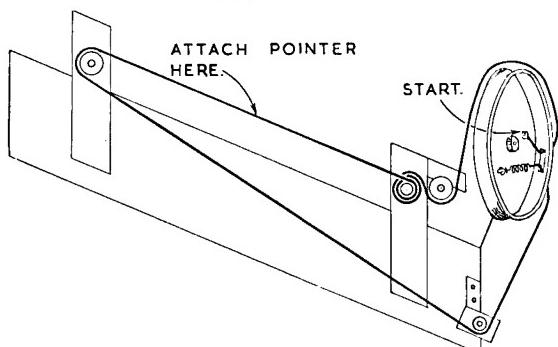
200 milliwatts.

Chassis Removal:

First remove the control knobs by pulling them straight off their spindles.

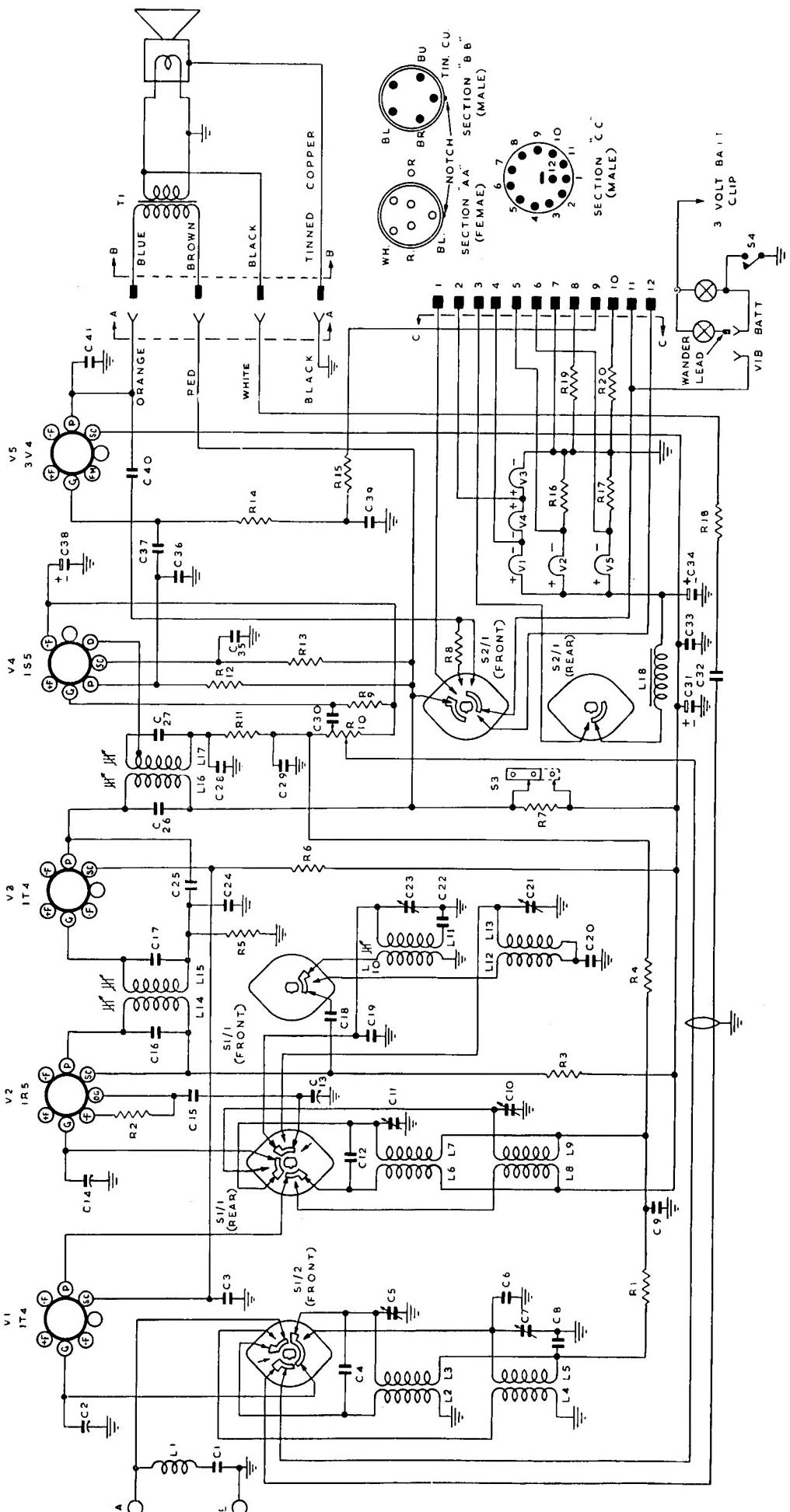
Then disconnect the Loudspeaker cable and Battery or Vibrator plug.

The chassis is held in the cabinet by four screws through the base of the cabinet. Removal of these enables the cabinet to be withdrawn.



Drive Cord Replacement:

The accompanying diagram shows the route of the cord and the method of attachment.



ALIGNMENT PROCEDURE

Manufacturer's Setting of Adjustments:

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using special equipment.

For all alignment operations, connect the low side of the signal generator to the receiver chassis and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments:

- (1) A.W.A. Junior Signal Generator, type 2R7003 or,
- (2) A.W.A. Modulated Oscillator, series J6726.
If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals, and for short wave alignment an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.
- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE

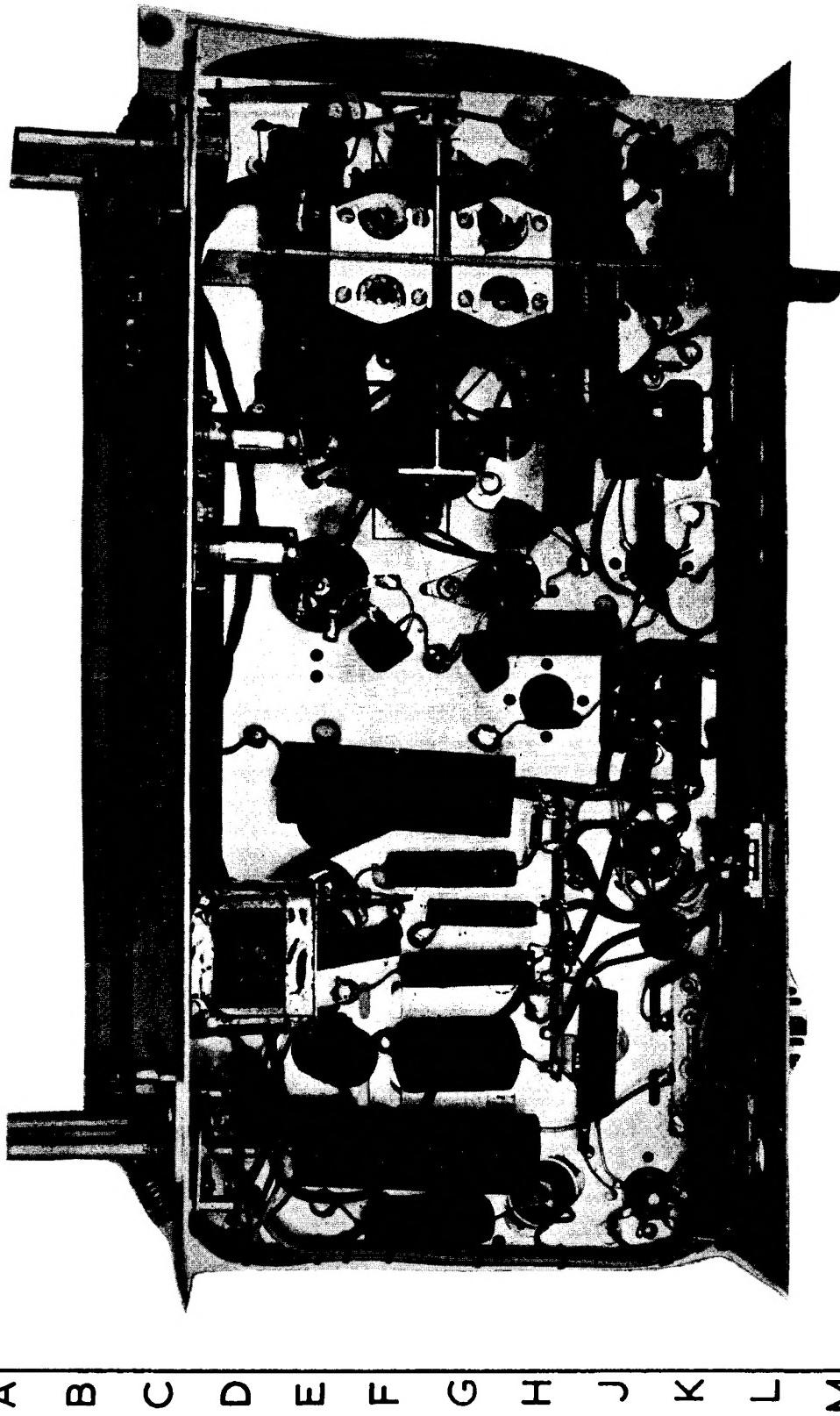
Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for maximum peak output:
1	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L17 Core.
2	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L16 Core.
3	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L15 Core.
4	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L14 Core.
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc/s.	600 Kc/s. (7ZL)	Osc. Core Adj. (L11)*
6	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	Osc. Adj. (C23)
7	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	R.F. Adj. (C11)
8	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	Aer. Adj. (C5)
Repeat adjustments 5, 6, 7, and 8.				
9	Aerial Terminal	16 Mc/s.	16 Mc/s.	Osc. Adj. (C21)†
10	Aerial Terminal	16 Mc/s.	16 Mc/s.	R.F. Adj. (C10)‡
11	Aerial Terminal	16 Mc/s.	16 Mc/s.	Aer. Adj. (C7)‡

* Rock the tuning control back and forth through the signal.

† Use minimum capacity peak if two can be obtained. Check to determine that C21 has been adjusted to correct peak by tuning the receiver to approximately 15.09 Mc/s. where a weaker signal should be received.

‡ Use maximum capacity peak if two can be obtained.

FIG. 2.



CIRCUIT CODE - RADIOLA 558-TC

Code No.	Description	Part. No.	Fig. No.	Location	Code No.	Description	Part. No.	Fig. No.	Location
I1	INDUCTORS Filter Unit (including C1)	9382	2	115	C11	2-20 $\mu\mu F$ air trimmer	19659	2	F14
I2	Aerial Coil 540-1600 Kc/s	15454	2	J16	C12	6.8 $\mu\mu F$ ceramic	19659	2	D13
I3	Aerial Coil 6-18 Mc/s	15456	2	E16	C13	12-430 $\mu\mu F$ tuning	18321	1	G7
I4	R.F. Coil 540-1600 Kc/s	23891	2	E13	C14	12-430 $\mu\mu F$ tuning	18321	1	G5
I5	R.F. Coil 6-18 Mc/s	26060	2	J13	C15	47 $\mu\mu F$ moulded mica	18321	1	G13
I6	Oscillators Coil 540-1600 Kc/s	3206A	2	H10	C16	100 $\mu\mu F$ silvered mica (in 1st I.F.)	18321	1	K12
I7	Oscillators Coil 6-18 Mc/s	32484	2	E10	C17	100 $\mu\mu F$ silvered mica (in 1st I.F.)	18321	1	K12
I8	Oscillators Coil 6-18 Mc/s	32700	1	J6	C18	0.05 $\mu\mu F$ paper 200V working	18321	1	J12
I9	1st I.F. Transformer	22703	1	J10	C19	9 $\mu\mu F$ mica	18321	1	H11
I10	2nd I.F. Transformer	26866	2	D6	C20	4,000 $\mu\mu F$ \pm 2½% padder	18321	1	F10
I11	Filament Choke				C21	2-20 $\mu\mu F$ air trimmer	19659	2	D11
I12					C22	490 $\mu\mu F$ \pm 2½% padder	19659	2	G10
I13					C23	2-20 $\mu\mu F$ air trimmer	19659	2	D13
I14					C24	0.02 $\mu\mu F$ paper 600V working	19659	2	J12
I15					C25	9 $\mu\mu F$ mica	19659	2	K10
I16					C26	100 $\mu\mu F$ silvered mica (in 2nd I.F.)	19659	2	K9
I17					C27	100 $\mu\mu F$ silvered mica (in 2nd I.F.)	19659	2	K9
I18					C28	100 $\mu\mu F$ mica	19659	2	H9
R1	RESISTORS 0.1 megohm $\frac{1}{2}$ watt	2	E13	K14	C29	100 $\mu\mu F$ mica	19659	2	K8
R2	0.1 megohm $\frac{1}{2}$ "	2	K14	K12	C30	0.01 μF paper 600V working	19659	2	G7
R3	10,000 ohms $\frac{1}{2}$ "	2	K12	J10	C31	200 p.v. electrolytic	19659	2	E5
R4	2.7 megohms $\frac{1}{2}$ "	2	K12	K13	C32	0.01 μF paper 600V working	19659	2	F2
R5	2.7 megohms $\frac{1}{2}$ "	2	K13	K13	C33	0.1 μF paper 200V working	19659	2	H9
R6	40,000 ohms 1 "	2	K11	L6	C34	400 μF 12 P.V. Electrolytic	19659	2	F3
R7	10,000 ohms $\frac{1}{2}$ "	2	D4	D4	C35	0.05 μF paper 200V working	19659	2	G5
R8	10,000 ohms $\frac{1}{2}$ "	2	H7	H7	C36	200 μF mica	19659	2	G6
R9	10.0 megohms $\frac{1}{2}$ "	2	C16	R10	C37	0.05 μF paper 200V working	19659	2	J4
R10	0.5 megohms Volume Control (tapped 40,000 ohms)	26890	1		C38	400 μF 12 P.V. Electrolytic	19659	2	F8
R11	22,000 ohms $\frac{1}{2}$ watt	2	J9		C39	0.4 μF paper 200V working	19659	2	G4
R12	0.68 megohms $\frac{1}{2}$ "	2	H6		C40	0.05 μF paper 200V working	19659	2	D3
R13	3.3 megohms $\frac{1}{2}$ "	2	H5		C41	0.0025 μF paper 600V working	19659	2	K3
R14	0.47 megohms $\frac{1}{2}$ "	2	J3						
R15	0.47 megohms $\frac{1}{2}$ "	2	J4						
R16	50 ohms 1 "	2	L4						
R17	25 ohms 1 "	2	L4						
R18	0.27 megohms $\frac{1}{2}$ "	2	E6						
R19	330 ohms $\frac{1}{2}$ "	2	L5						
R20	330 ohms $\frac{1}{2}$ "	2	L5						
C1	CAPACITORS 47 $\mu\mu F$ Mica	2	K16						
C2	12-430 $\mu\mu F$ tuning	18321	1	G3					
C3	0.1 μF Paper 200V working	18321	2	H10					
C4	6.8 $\mu\mu F$ ceramic	2	J17						
C5	2-20 $\mu\mu F$ air trimmer	19659	2	H15					
C6	14 $\mu\mu F$ mica	2	E16						
C7	2-20 $\mu\mu F$ air trimmer	19659	2	F16					
C8	0.05 μF paper 200V working	2	J16						
C9	0.05 μF paper 200V working	2	F14						
C10	2-20 $\mu\mu F$ air trimmer	19659	2	H14					
					X A20				
					LOUDSPEAKER				
					9" x 6" Permanent Magnet	21515			
					SWITCHES				
					S1	Range Switch	27094	2	G16
					S2	Battery-Tone Switch	33070	2	D3
					S3	Battery-Save Switch	22775	2	L7
					S4	Pilot Lamp Switch (on Tuning Spindle)	33071	1	D4
					VIBRATOR POWER UNIT				
					6 Volt Power Unit	22770			
					4 Volt Power Unit	19190			

REPLACEMENT PARTS

Cabinet	28116
Dial Scale	32217
Knob Assembly	26516
Knob Assembly, Range & Battery/Tone	26519
Lamp Holder	31804
Plug, 12 pin	17757
Pointer	33048
Socket 7 pin Valve	19965
7 pin Valve (floating)	23274
Spring, drive	1741

D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance In ohms
Aerial Coil (M.W.):	
Primary (L2)	12
Secondary (L3)	5
Aerial Coil (S.W.):	
Primary (L4)	3
Secondary (L5)	*
R.F. Coil (M.W.):	
Primary (L6)	40
Secondary (L7)	5
R.F. Coil (S.W.):	
Primary (L8)	*
Secondary (L9)	*
Oscillator Coil (M.W.):	
Primary (L10)	1.5
Secondary (L11)	6
Oscillator Coil (S.W.):	
Primary (L12)	*
Secondary (L13)	*
I.F. Filter (L1)	17.5†
L.T. Choke (L18)	*
1st I.F. Transformer Windings	10
2nd I.F. Transformer Windings	7.5
Smoothing Choke (L75)	200
R.F. Filter Chokes (L73, L74)	*
R.F. Filter Chokes (L71, L72)	9
Loudspeaker Input Transformer (T1):	
Primary	500
Secondary	*
Vibrator Transformer (T71):	
17568 Primary	*
17568 Secondary	300
17892 Primary	*
17892 Secondary	150

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations and it should not be assumed that a component is faulty if a slightly different reading is obtained.

* Less than 1 ohm.

† In some receivers this reading may be as high as 60 ohms.

SOCKET VOLTAGES

VALVE	Bias Volts:		Screen to Chassis Volts:		Anode to Chassis Volts:		Anode Current mA:		Filament Volts:	
	B	V	B	V	B	V	B	V		
1T4 R.F. Amp.	F§	—	—	47*	47*	90	90	1.3	1.3	1.3—1.4
	S	—	—	25*	—	48*	—	0.7	—	—
1R5 Converter	F	—	—	59*	59*	59*	59*	0.9	0.9	1.3—1.4
	S	—	—	34*	—	34*	—	0.4	—	—
1T4 I.F. Amp.	F	—	—	47*	47*	90	90	1.7	1.7	1.3—1.4
	S	—	—	25*	—	90	—	1.0	—	—
1S5 Det., A.F. Amp. A.V.C.	F	—	—	24†	24†	27†	27†	0.1	0.1	1.3—1.4
	S	—	—	24†	—	27†	—	0.1	—	—
3V4 Output	F	—4.5	—4.5	90	90	86	86	6.3	6.3	1.3—1.4
	S	—2.5	—	48	—	88	—	3.8	—	—

* These readings may vary depending on the resistance of the voltmeter used.

† Calculated from measured current. An ordinary voltmeter will register a lower value.

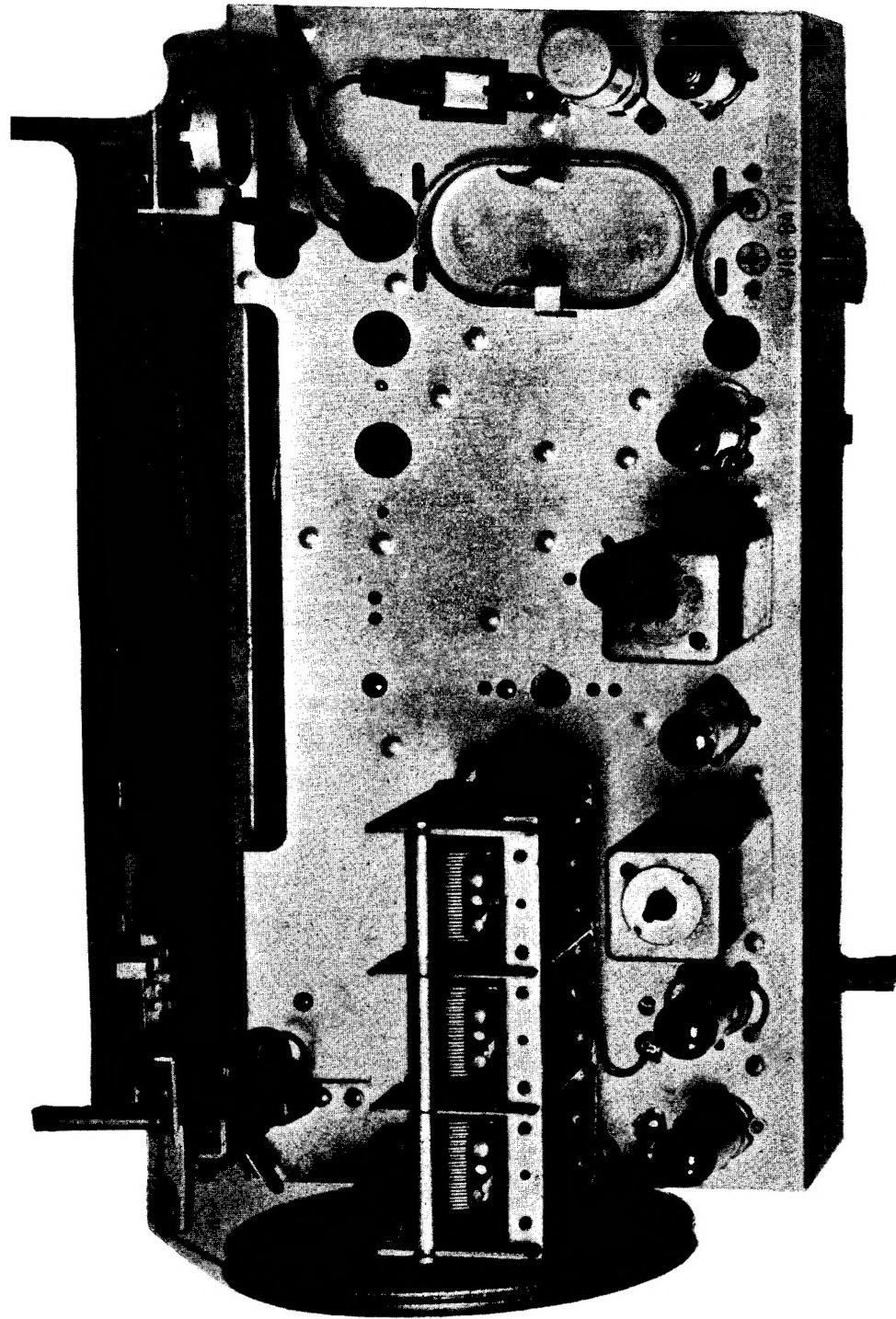
§ F = "Full" position of Battery/Saving Switch.

S = "Save" position of Battery/Saving Switch.

NOTE:—Battery Saving should not be used on vibrator operation.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H J K L M

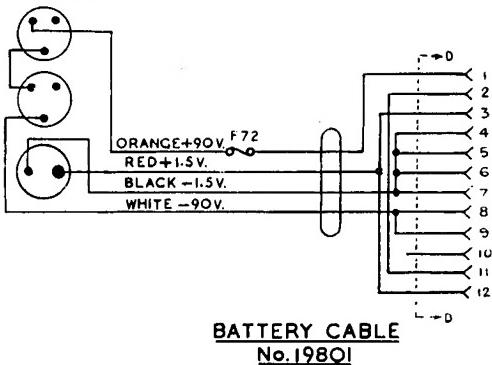


A B C D E F G H J K L M

FIG. I.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

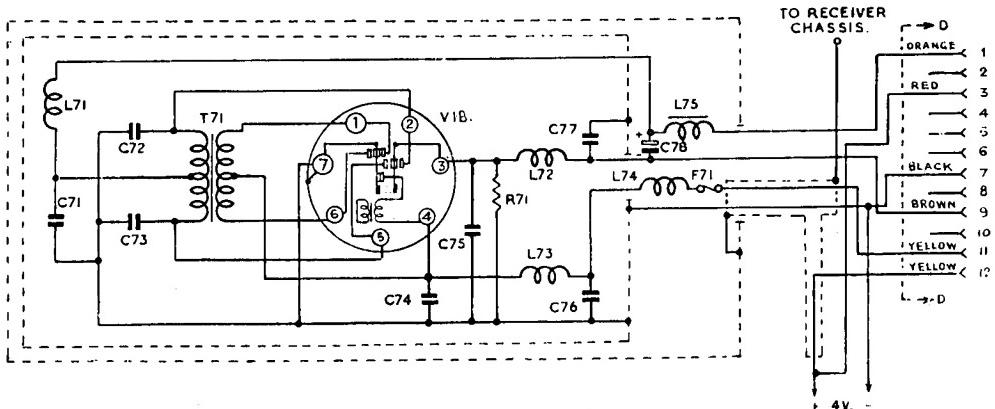
PLUGS VIEWED
FROM WIRING SIDE



VIBRATOR POWER UNITS 19190, 22770 — CIRCUIT CODE.

Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.	Description	Part No.
INDUCTORS								
L71	R.F. Choke	13809	C72	0.02 μ F Paper, 600v. working		C78	20 μ F 200, P.V. Electrolytic	
L72	R.F. Choke	13809	C73	0.02 μ F Paper, 600v. working		C79	0.1 μ F Paper, 200v. working (22770 only)	
L73	R.F. Choke	3149						
L74	R.F. Choke	3149	C74	0.1 μ F Paper, 400v. working	T71			
L75	L.F. Choke	8321	C75	0.01 μ F Paper, 600v. working		Vibrator Transformer (19190) (22770)	17568 17892	
RESISTORS								
R71	150 ohms, 1 watt (wire-wound)		C76	0.1 μ F Paper, 400v. working		Vibrator Cartridge (19190)	V6804	
R72	12 ohms, $\pm 5\%$, 1 watt (22770 only)		C77	0.01 μ F Paper, 600v. working		Vibrator Cartridge (22770)	V5211	
C71	0.01 μ F Paper, 600v. working							

VIBRATOR POWER UNIT No.19190



6 VOLT VIBRATOR POWER UNIT NO. 22770

